

Scientific Data in the Internet Era: Changes and More Changes!

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The Internet and World Wide Web have revolutionized the dissemination of scientific data. With a few keystrokes, a provider can make data available to everyone who is connected to the Web. Yet the present-day features of good scientific data must be preserved – quality, knowledge of the source, documentation and uncertainty. In addition, applications almost always require data from a number of sources, thereby creating a renewed need for interoperability among data systems. Finally, the advent of e-commerce is changing the dynamics of the economics of scientific data. All these changes are occurring as the need for data grows, a need being generated by advances in modeling and simulation as well as by the commercialization of chemical engineering software.

The National Institute of Standards and Technology has been at the forefront of addressing these issues, in partnership with groups such as CODATA, IUPAC and ASTM. In this presentation, the changing nature of scientific data in the Internet era will be discussed, with special emphasis given to standards development, international cooperation and especially data quality issues. Particular focus will be placed on how to achieve a balance between scientific and commercial interests in an online world.